

11-2 Probability and Punnett Squares

- ## Key Terms
- Genotype – The genetic makeup. What genes they have. TT Tt tt
 - Homozygous – Having two identical alleles (TT or tt) aka *truebreeding*
 - Heterozygous – Having two different alleles (Tt) aka *hybrid*
 - Phenotype – Displayed physical characteristics. What trait they express.
 - Examples: Tall, Blonde hair, Brown eyes, Freckles

Probability and Punnett Squares

- What is the probability that you flip two coins and the combination is tails/tails?

Tails Tails
 $\frac{1}{2}$ x $\frac{1}{2}$ = $\frac{1}{4}$

- Using a Punnett square

	H	T
H	HH	HT
T	HT	TT

Tt X Tt Cross

Problem: Cross a hybrid (heterozygous) tall with a hybrid (heterozygous) tall pea plant

Alleles that have segregated. Found in gametes (pollen)

Alleles that have segregated. Found in gametes (egg)

Tt X Tt Cross

Expected Genotype

- $\frac{1}{4}$ TT (homozygous dominant)
- $\frac{1}{2}$ Tt (Heterozygous)
- $\frac{1}{4}$ tt (homozygous recessive)

Expected Phenotype

- $\frac{3}{4}$ Tall
- $\frac{1}{4}$ Short